

# Navigating Voluntary Cleanup Program and Corrective Action Program Sites with Petroleum Storage Tanks

Richard Scharlach, P.G. (VCP/CA Section)

Stephanie Saldaña, P.G. (PST/DCRP Section)



# Purpose

Understanding types of Petroleum Storage Tank (PST) releases

Texas Risk Reduction Program (TRRP) vs PST release clarification

Understanding how and why PST releases are managed within different remediation programs

# Agenda

## Background

- Governing rules for PST releases and TRRP releases
- Distinguishing cleanup rules for PST releases
- Definitions

## Leaking Petroleum Storage Tanks (LPSTs) and PSTs in the VCP-CA Section

- Industrial Hazardous Waste Corrective Action (IHWCA)
- Department of Defense (DOD)
- Innocent Owner/Operator Program (IOP)
- Municipal Setting Designation (MSD)
- Voluntary Cleanup Program (VCP)

# What This Talk Does Not Cover

Not a comprehensive review of all PST vs TRRP jurisdictional issues

PST Facility Compliance Issues

Spill Response or Spill Rules





# Regulations

“PST Rules” or “Chapter 334”

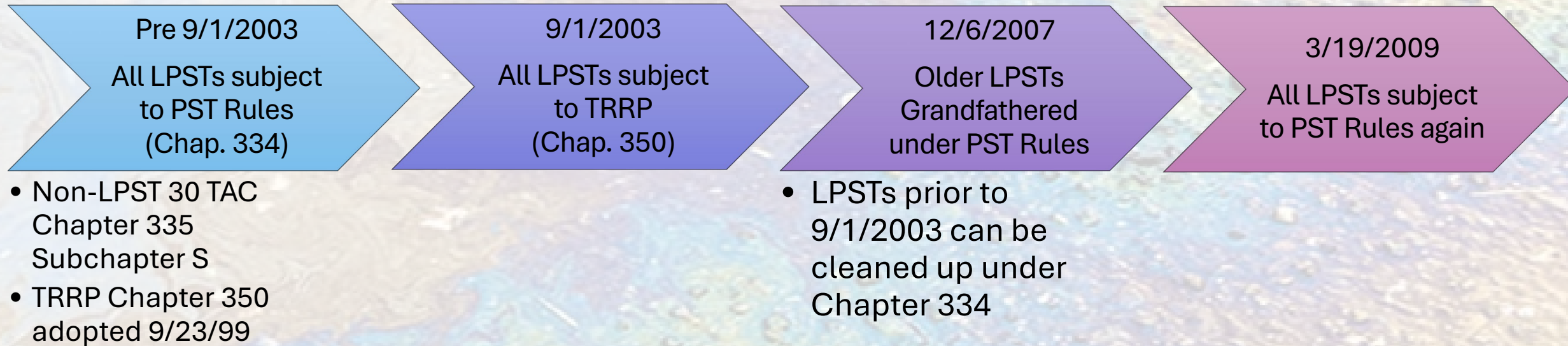
Title 30, Texas Administrative Code (30 TAC), **Chapter 334:**  
Underground and Aboveground Storage Tanks  
(Primarily subchapters A, D, F, and G)

“TRRP Rules”, “TRRP”, or “Chapter 350”

30 TAC **Chapter 350:** Texas Risk Reduction Program



# PST Rules and TRRP Rules – A History



# Regulated Substances under Chapter 334

## PST Rules-Petroleum Substance

### *Petroleum Substance:*

- Crude oil or any derivative of crude oil which is liquid at standard conditions of temperature and pressure.
- Ex. Crude oil, motor fuel, aviation gasoline and jet fuel, solvents, illuminating oils, used oil, distillate oils, residual oils, gas-turbine fuel oils, lubricants, building materials (oils), insulating and waterproofing oils



**30 TAC 334.2(86)**



# Regulated Substances under Chapter 334 PST Rules – Hazardous Substance

## *Hazardous Substance:*

- Any substance defined or listed in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and which is not regulated as a hazardous waste under the federal Solid Waste Disposal Act, Subtitle C (42 USC, §§6921, et seq.)



**30 TAC 334.2(47)**



# Regulated Substances under Chapter 334

## PST Rules – Petroleum Product

***Petroleum Product*** : Petroleum substance obtained from distilling and processing crude oil that is liquid at standard temperature and pressure and is capable of being used as fuel for the propulsion of a motor vehicle or aircraft

- E.g., Gasoline, gasohol, other alcohol blended fuels, aviation gasoline, kerosene, distillate fuel oil, Number 1 and Number 2 diesel, and biodiesel blended with Number 1 or Number 2 diesel
- Does not include naphtha-type or kerosene-type jet fuel, or a petroleum product destined for use in chemical manufacturing or feedstock of that manufacturing

**30 TAC 334.2(84)**

# UST Releases Subject to Chapter 334 PST Rules



## Release from USTs regulated under Chapter 334

- Meet definition of UST [334.2(120)]
  - Any one or combination of underground tanks and connecting piping used to contain accumulation of regulated substances with volume of 10% or more below ground surface.

Contain petroleum substance [334.2(86)] or hazardous substance [334.2(47)]

Not exempt [334.3(a)] or excluded [334.4(a)]

# AST Releases Subject to Chapter 334 PST Rules

## Releases from ASTs regulated by Chapter 334

- Meet definition of AST [334.2(4)]: A non-vehicular device that is made of non-earthen materials; Located on or above ground surface, or on or above the surface of the floor of a structure located below ground.

## Contain Petroleum Product [334.2(84)]

## Capacity of 1,100 gallons or greater

## Not exempt or excluded (334.123, 334.124)





# General Releases/Spills Subject to Chapter 334 PST Rules

Releases of regulated substances resulting from the filling, placement, or transfer of regulated substances into a UST or an AST, or during the transfer or removal of regulated substances from a UST/AST system



# UST/AST Releases Subject to Chapter 350 TRRP Rules

USTs and ASTs not regulated under Chapter 334

- Containing non-regulated substances

Non-petroleum products/hazardous substances in ASTs

Hazardous wastes stored in USTs/ASTs

- USTs **exempted** and **excluded** under 334.3 and 333.4 unless regulated by other agencies
- ASTs **exempted** and **excluded** under 334.123 and 334.123 unless regulated by other agencies

Spills or releases that are not associated with fuel tanks or during fueling operations



# Common Examples of UST Releases Not Regulated Under Chapter 334 PST Rules

USTs containing hazardous waste and mixture of hazardous waste and regulated substance

Farm or residential tanks used for storing heating oil or motor fuel for non-commercial purposes

Tanks and sumps used solely for temporary storage and are routinely removed within 48 hours of the discovery of the release

Tanks associated with permitted wastewater facilities



# Common Examples of AST Releases Not Regulated Under Chapter 334 PST Rules

Jet Fuel ASTs – not Chapter 334 regulated since naptha/kerosene-based jet fuel is not a petroleum product

Used Oil AST – used oil not a petroleum product

AST at Bulk Storage Facility – exempted by definition

Small Farm Tanks – **exempted** due to size (<1,100 gals) and non-commercial use

Small ASTs – **excluded** due to size (<1,100 gallons)

# Quiz Question #1

Diesel AST = 250 gallons

Which set of rules?



# Quiz Question #1 - Answer

Diesel AST = 250 gallons

Which set of rules?

Answer = Chapter 327 then Chapter 350  
TRRP if not addressed within 6 months

- Diesel tank is excluded from Chapter 334 due to small size
- No Chapter 334 reports, no LPST number

**30 TAC 334.124(a)(1)**





# Quiz Question #2

Acetone UST = 500 gallon

- Hazardous substance

What rules apply?



# Quiz Question #2 - Answer

Acetone UST = 500 gallon

- Hazardous substance

What rules apply?

- Chapter 334 source UST  
Hazardous substance
- All regular PST/LPST forms  
required
- If contamination present, LPST  
number will be assigned

**30 TAC 334.1(a)(1)**



# PST Sites - Interaction with the Voluntary Cleanup Program and Corrective Action Section

Programs include:

Industrial and Hazardous Waste Corrective Action Program (IHWCA)

Innocent Owner Program (IOP)

Municipal Setting Designations (MSD)

Voluntary Cleanup Program (VCP)



# Industrial and Hazardous Waste Corrective Action Program (IHWCA)

## Manages

- Releases subject to Chapter 350 TRRP rules
- Releases from Bulk Storage Facilities and other ASTs exempt from Chapter 334 PST rules
- Releases from Department of Defense (DOD facilities) that are regulated under Chapter 350 TRRP rules
- Commingled plumes determined to be subject to TRRP rules

## Does Not Manage

- Releases subject to the Chapter 334 PST rules

# Commingled Chapter 334 and Chapter 350 releases

LPST release (Chapter 334) commingles with a TRRP release (Chapter 350)

- Distinct plumes addressed under respective rules
- Commingled plume which cannot be managed separately regulated under TRRP Rules
- Commingled portion remediated under TRRP rules
- **Don't make assumptions – communicate w/ TCEQ PM**

# Plume Scenario 1

TRRP source is known. LPST source is known.

LPST source is a Petroleum Substance.

Plumes are separate.

- 2 distinct plumes
- Essentially 2 cleanups
- Chapter 334 and Chapter 350

LPST Source - benzene

TRRP Source – Dry cleaner

TRRP Rules

PST Rules

GW Flow Direction

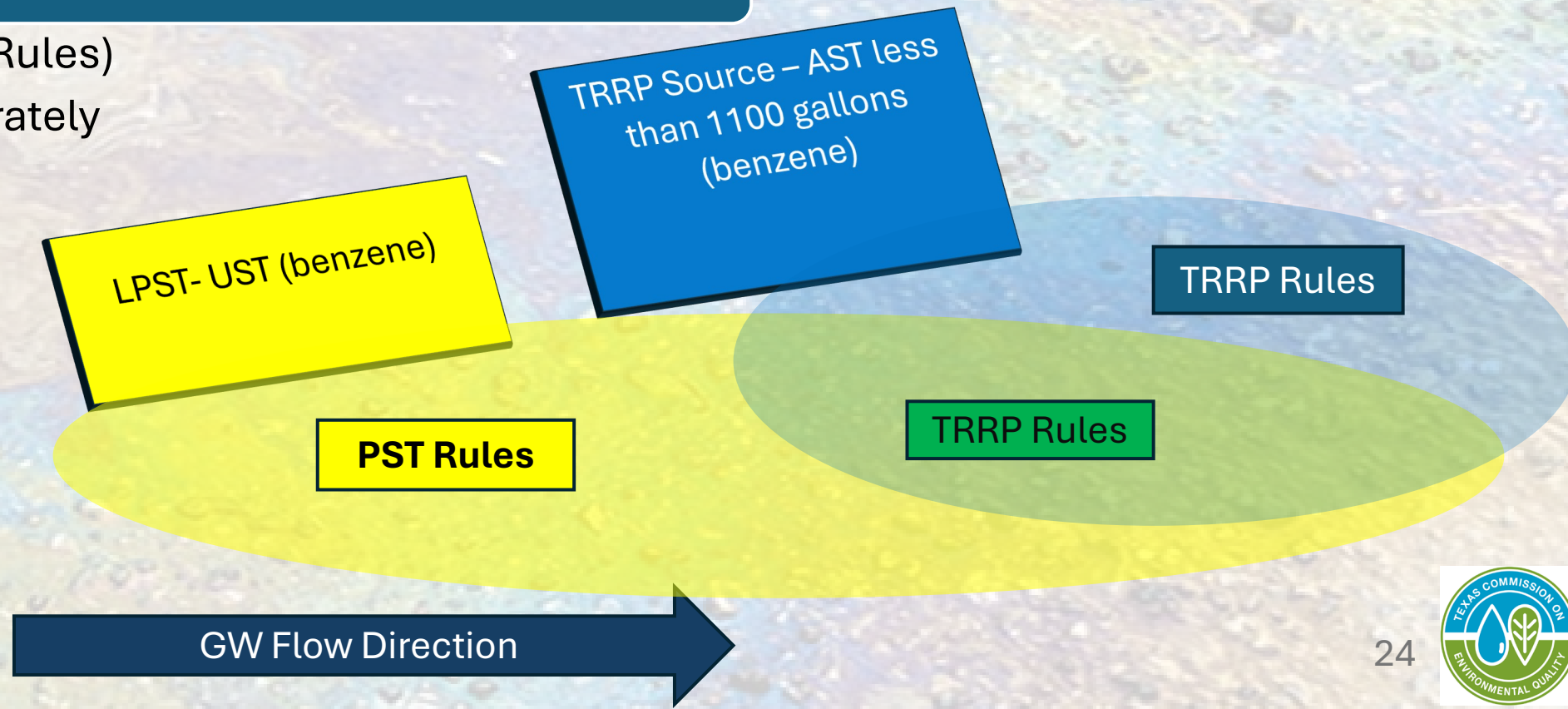


# Plume Scenario 2 - Commingled

TRRP source is known. LPST source is known.

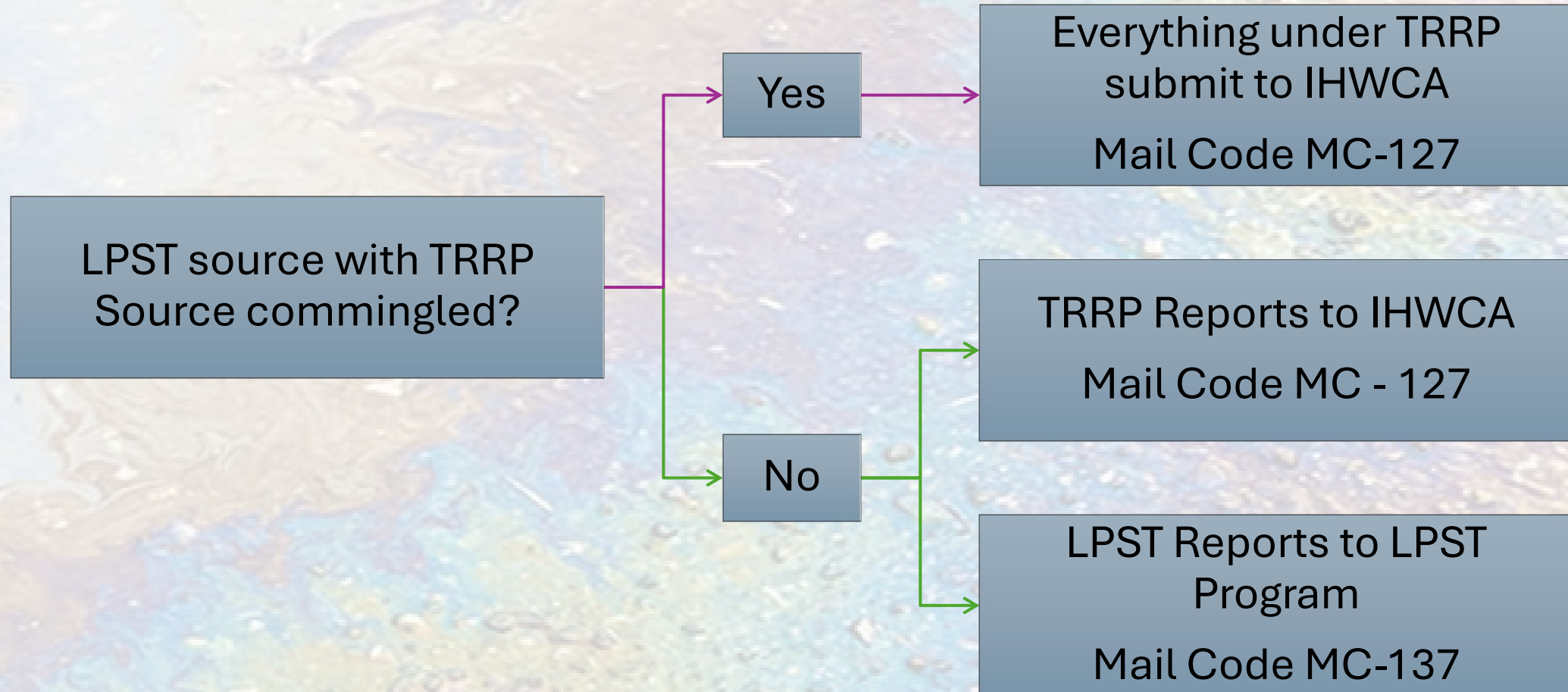
Plumes are commingled.

- Chapter 350 (TRRP Rules)
- Can't manage separately





# Reports: Where to Send for IHWCA, DOD and LPST



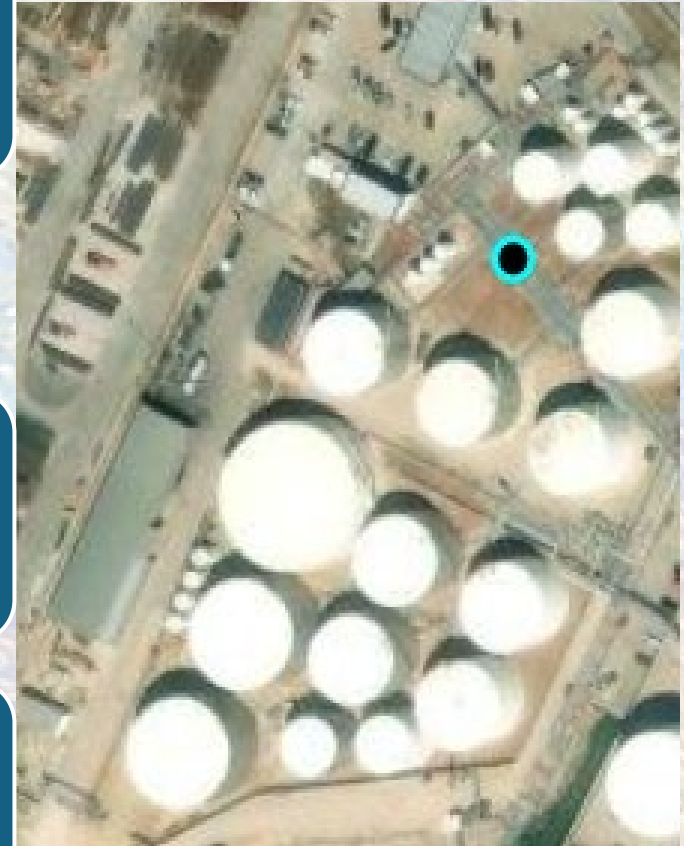
# Quiz Question #3

## Bulk Storage Facility

- Consultant prepared Release Determination Report (RDR)
- Sent RDR/information to PST Program

Was the right form used?

Was it sent to the right place?



# Quiz Question #3 - Answer

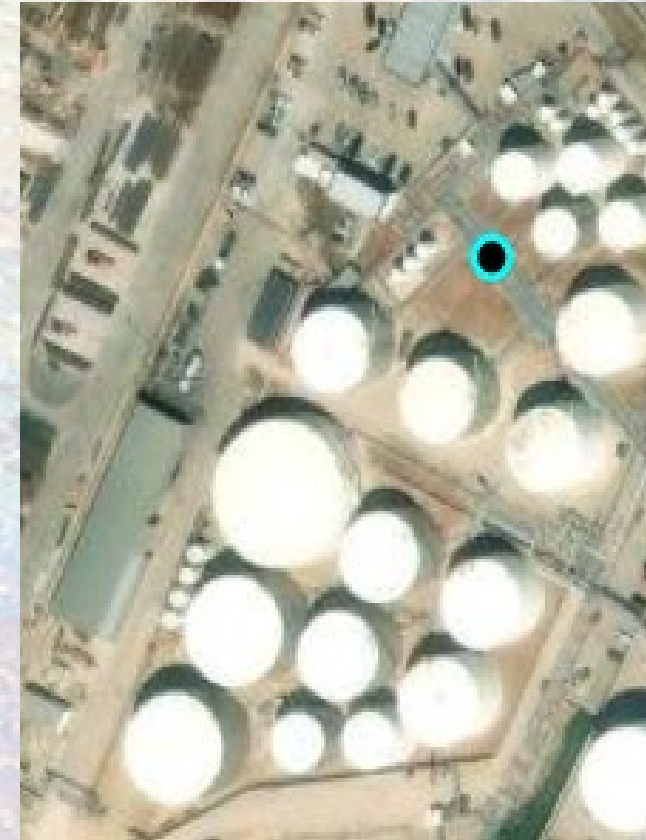
## Bulk Storage Facility

- Consultant prepared RDR
- Sent RDR/information to PST Program

Was the right form used? **No**

Was it sent to the right place? **No**

**At a minimum, a Determining Releases Subject to TRRP Report should have been submitted to the IHWCA Program**



# Quiz Question #4

## 5-acre former Industrial Site

- Consultant prepared Phase II ESA
- Sent APAR to IHWCA
  - TRRP sources
  - PST sources

Was it sent to the right place?

Were the right forms used?





# Quiz Question #4 -Answer

## 5-acre former Industrial Site

- Consultant prepared Phase II ESA
- Sent APAR to IHWCA
  - TRRP sources
  - PST sources

## Was it sent to the right place? **Yes & No**

- TRRP sources sent to IHWCA
- PST sources need to go to PST

## Were the right forms used? **Yes & No**

- TRRP sources – can start with Phase II ESA
- PST sources – need RDR



# PST and Innocent Owner/Operator Program (IOP)



IOP sites commonly adjacent to LPST sites

LPST reports and data can be used to support Innocent Owner demonstration:

- IOP data should be recent (<7 yrs ) to document contamination/release
- Concentration does not have to be above PST action levels – just detected (>SDL)

**Cannot** cause or contribute to release

- If Onsite UST – it may be difficult for IOP applicant to rule out onsite contribution of BTEX/MTBE

# PST & Municipal Settings Designation(MSD)

MSDs **cannot** be used to modify LPST assessment/remediation requirements

MSDs **cannot** alter requirements of federally authorized environmental programs

Certain AST releases may be addressed by MSDs



# PST & Voluntary Cleanup Program(VCP)

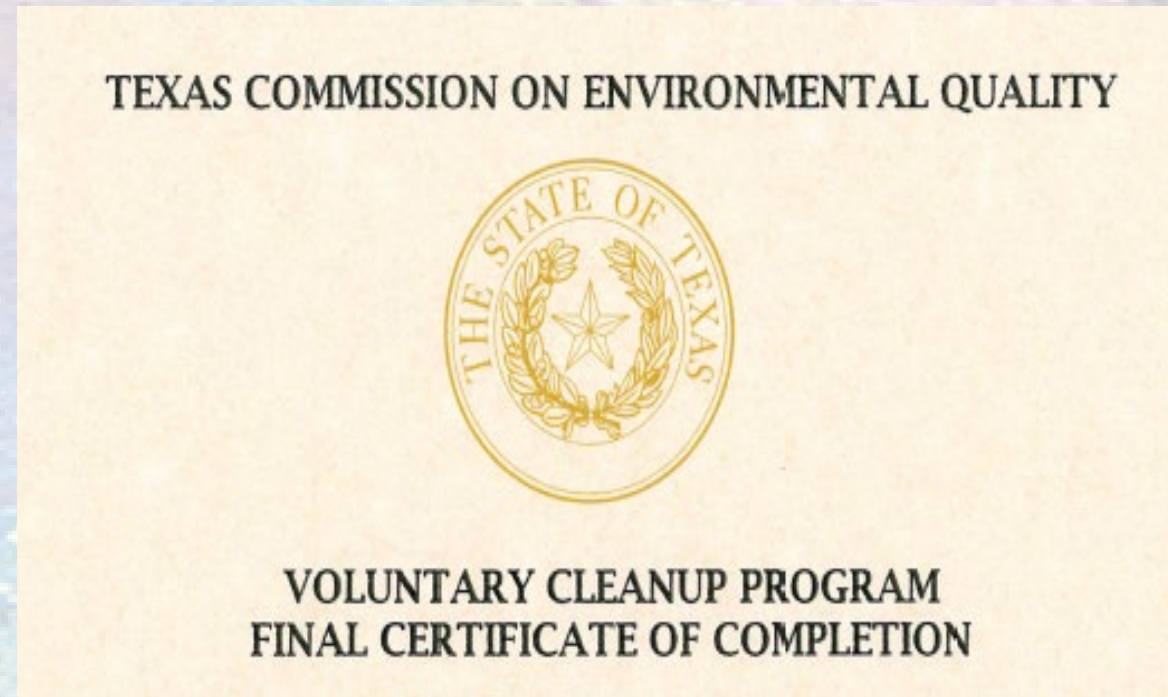
The VCP manages sites with releases subject to the PST rules and TRRP rules

VCP applicant uses PST Rules and Reporting requirements for PST sources

- CAPM & RCAS

VCP PM handles

- PST release determination
- LPST assessment and remediation
- TRRP assessment and remediation





# PST & VCP – Part 2

## PST Program

- Generates the LPST #
- Issues no leaker letters RDRs
- Provides rule and programmatic expertise

## VCP

- Review all PST Reports – RDRs, ARF-RBA
- VCP **does not** handle PST registration/compliance Issues
- Reviews all TRRP Reports



# Voluntary Cleanup Program Agreement

## APPLICABLE RULES AND REGULATIONS

The VCP rules, 30 Texas Administrative Code (TAC) 333, Subchapter A and the following rules or regulations are specifically designated as being directly applicable for the Site and must be followed. Citation of these rules does not imply that they are the only applicable rules.

\_\_\_\_ 30 TAC 350 (Texas Risk Reduction Program Rules - TRRP)  
\_\_\_\_ 30 TAC 334 (Petroleum Storage Tank Rules)  
\_\_\_\_ Other \_\_\_\_\_

## Agreement

- Between TCEQ and VCP Applicant

Lists the Applicable Rules applicable to site (TRRP, PST)

# VCP Agreement - Reports

## SUBMITTALS AND SCHEDULES

The following plans and reports were included with the VCP application, in this Agreement, or have been added by amendment to this Agreement:

- \_\_\_\_\_ Phase I Environmental Site Assessment (ESA)
- \_\_\_\_\_ Phase II/Limited Phase II ESA
- \_\_\_\_\_ Affected Property Assessment Report - Texas Risk Reduction Program (TRRP) Rules
- \_\_\_\_\_ Response Action Plan (TRRP)
- \_\_\_\_\_ Other: \_\_\_\_\_

## Report Submittal Schedule

- List Reports submitted to support the VCP Application
- Note the type of reports to be submitted and Date they will be submitted
- Include information known at time of application submittal

## Option to request discussion with the VCP Program

# Chemicals of Concern - TPH

## PST

TPH Method Tx 1005 used as screening and **qualitatively**

- Detections in >nC12 boiling point range or higher, then respondent looks for polycyclic aromatic hydrocarbons

## TRRP

TPH can be considered a chemical of concern.

- TPH mixture PCL calculations
- Tx 1005 and Tx 1006 values used **quantitatively**
- Discrete samples

Meet TRRP data requirements



# VCP – Timing of LPST Discovery & VCP Entry



## VCP sites might include:

- LPST closed out prior to property being entered into VCP
- Active LPST entered into VCP
- LPST discovered while the VCP is in assessment
- The same 3 situations also apply to PST RDR (No leaker)

# LPST site closed prior to property being entered into VCP

VCP may require a limited investigation of closed LPST Area – to confirm current site conditions and exposure assumptions are consistent with those at the time of LPST closure.

E.g., VCP might require assessment of groundwater (if not determined at time of LPST closure)

# Active LPST Entered Into VCP

Goodbye LPST PM; Hello VCP PM

Once VCP agreement is signed, all the PST (corrective action) reports go to the VCP PM

PST database updated to reflect that LPST is currently managed in VCP



# LPST Release (334) Discovered During VCP Assessment



Release investigation should be performed in accordance with Release Investigation and Reporting guidelines (RG - 411).

Submit RDR and PST RDR form (TCEQ-00621) (even if data is in a Phase II or APAR).

Using the correct forms will ensure quick evaluation of the PST release. Don't assume that the APAR data will be a substitute for PST RDR.

The VCP Program **does not** track RDRs but works with the PST Program, which tracks RDRs.



# What about “Ghost Tanks” discovered during VCP Site Assessment?

Subject to the PST registration, assessment, and corrective action regulations

Should be permanently removed within 60 days of discovery

The VCP applicant should prepare an RDR in accordance with PST requirements

- Registration forms should be sent to PST Registration  
**Mail Code 138**
- RDRs should be sent to the VCP PM



# Case Studies

# CS1: LPST closed prior to property entering VCP

Property entered into VCP has TRRP sources and a closed LPST

Site had tank pit and LPST number assigned

- Tanks removed, 2,500 gallons and 10,000 gallons
- Diesel substance
- Release in 1990, closed LPST in 1999 (Plan A)
- No exit criteria in Closure

VCP Application stated only Chapter 350 to be applied



# CS1: Assessment of Closed LPST Site in the VCP

## LPST Area reassessed as part of VCP Assessment

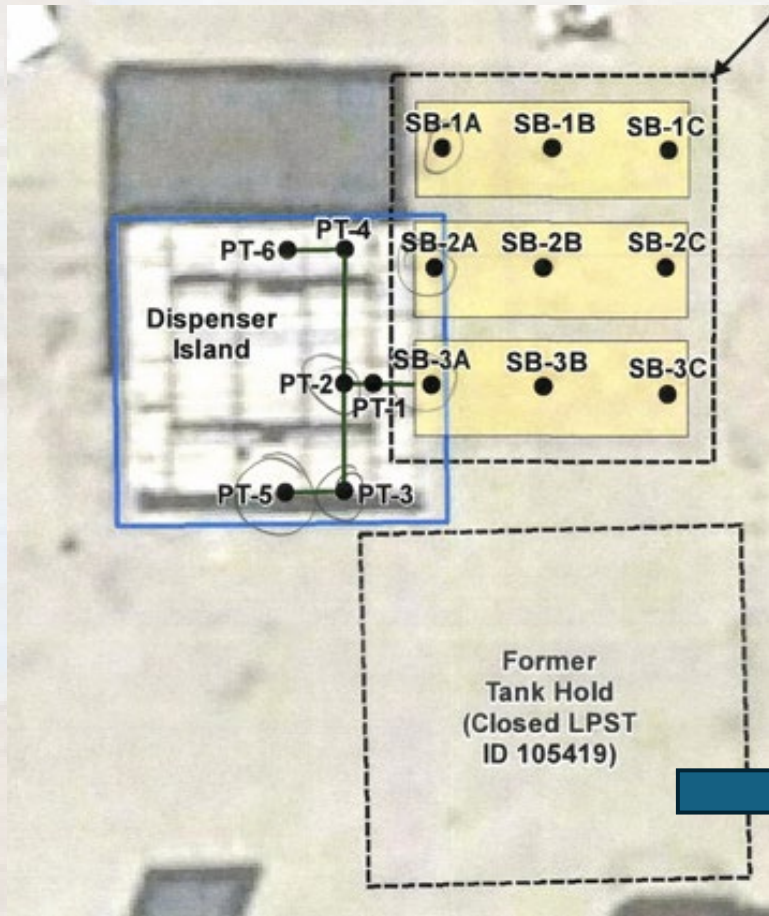
- 2023 BTEX concentrations in soil and groundwater were lower than historical 1999 BTEX concentrations for LPST closure

No further assessment of LPST needed

Next Steps – TRRP sources to be evaluated under Chapter 350



# CS2: Property Entered in VCP Includes a Closed LPST Site & New PST Area



Pre-VCP, the Site had Closed LPST number.

- LPST had an NFA Closed Soil investigation
- Groundwater was not assessed during that investigation.

In VCP, a newer tank hold was evaluated.

- Tanks were removed and the RDR was submitted to VCP.
- No Leaker letter was issued based on RDR.

Groundwater contamination was investigated at the site during time in the VCP

# CS2:Next Steps

No further Chapter 334 evaluation or reporting

All other information and potential sources investigated in VCP

All other sources were Chapter 350

MSD used to address GW Ingestion pathway - TRRP sources



# CS3: LPST (i.e., leaker) Identified While Site in VCP

## Acetone 500-gallon UST

- Hazardous substance

## Tank removed prior to VCP entry

## Only UST removal form

## No LPST number prior to VCP

- RDR submitted to VCP
- LPST Number generated (coordination between sections)

## Chapter 334 source



# CS3-A: Plot Twist

VCP Site also has TRRP source with the acetone contamination

Plumes have commingled

Chapter 334 source commingled with Chapter 350 sources

- Plumes cannot be managed separately
- **Assessment and Remediation must run under Chapter 350**



# CS4: LPST Discovered During a VCP Application Review

VCP application and agreement stated Chapter 350 applicable

No LPST assessment or number

Documents Indicated

- Phase I ESA indicates multiple ASTs/USTS
- PST registration old 5,000-gallon gasoline UST

**Application  
UNDER REVIEW**

# CS4: Potential for both PST and TRRP Regulated Releases



**Potential Chapter 334**

**Tank not registered but known to be diesel**



**Chapter 350 Source**

# CS4: What is Next for This Site?

## VCP Application Review:

- PST vs TRRP Jurisdiction on tanks was not clear.
- TRRP sources were present.
- Diesel AST was identified in photo in the application materials. No other details were provided.
  - Clarification on size of Diesel AST will be requested by VCP.
- PST registration is needed for the diesel tank.

## If these tanks are subject to PST rules

- Then the RDR will need to be submitted for the Chapter 334 release.
- This includes the Gasoline UST and Diesel AST (if indication of release).

## Further investigation will be needed .

- If it is determined to not be distinct plumes, it will all be Chapter 350.



# Reports and Closures



# ALL REPORTS REVIEWED IN VCP



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY PETROLEUM STORAGE TANK PROGRAM ASSESSMENT REPORT FORM

This form (TCEQ-0562) should be completed for leaking petroleum storage tank (LPST) sites subject to 30 Texas Administrative Code (TAC) 334 **only**. LPST sites are subject only to 30 TAC 334. Please note that all information used to complete TCEQ-0562 (this form) should be obtained according to procedures outlined in the document "Guidance for Risk-Based Assessments at LPST Sites in Texas" (RG- 175). Also note that if the Table of Contents (p. 2) of this form is not fully completed, the TCEQ will return the entire form to the responsible party without review. This document must not be altered in any manner. Requested information denoted with "\*" is beyond the minimal requirements for a site assessment as defined by 30 TAC 334.78(a)(5). For sites eligible for reimbursement, attach a workplan(s) and preapproval request(s) for the next appropriate activity.

### LEAKING SITE INFORMATION

LPST ID No.:	Facility ID No.:
Site Priority:	
Facility Name:	
Facility Address:	



## Texas Commission on Environmental Quality Texas Risk Reduction Program

### Instructions for Completing an Affected Property Assessment Report

#### Purpose

The purpose of this document is to provide a standard format for the Affected Property Assessment Report (APAR).

#### Regulatory Citation

30 TAC §350.91

#### Abbreviations and Acronyms

BAF – bioaccumulation factor  
BCF – bioconcentration factor  
BSAFs – biota-sediment accumulation factors  
bgs – below ground surface  
CAPM – corrective action project manager  
CAS No. – Chemical Abstract Service registry number  
C/I – commercial/industrial  
COC – chemical of concern  
CP – compliance plan  
DCRP – Dry Cleaner Remediation Program

NFA – no further action  
NOR – notice of registration  
NOV – notice of violation  
OSHA – Occupational Safety and Health Administration  
PCBs – polychlorinated biphenyls  
PCL – protective concentration level  
PCLE – protective concentration level exceedance  
POE – point of exposure  
PST – Petroleum Storage Tank  
QA/QC – quality assurance/quality control



# Where to Send Reports for VCP?

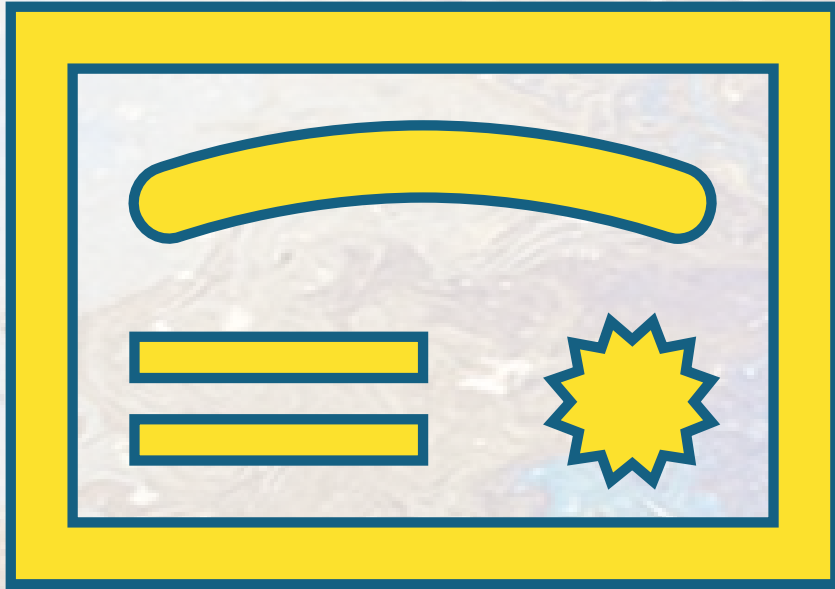
**Mail Code 221**

## What to send to VCP?...Everything

- Chapter 334 release (RDR, RBA-ARF, etc.)
- Chapter 350 release (APAR, RAP, RACR etc.)

## What to send to PST? ...Nothing

# How Are LPST Sites Closed Out in VCP?



LPST cases are closed at the time the VCP Certificate of Completion is issued.

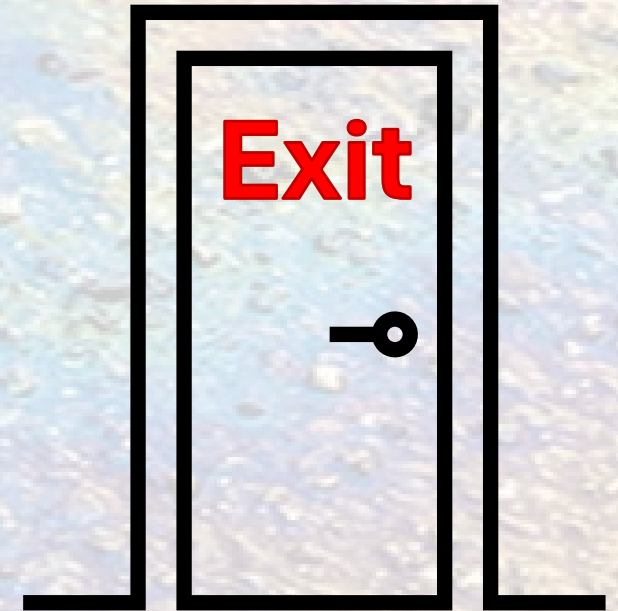
VCP COC cover letter will outline which rule standards were met.

# LPST Closure & Exit Criteria

If Post-Plan A Exposure Assumptions are used to close the LPST, then those are included as an Exhibit to the VCP Certification of Completion

The VCP COC then must be filed in the County Records

This applies to historical LPST closures and LPST closed during the VCP process





# Summary

**Be familiar with PST Rules, Definitions, Exemptions/Exclusions**

**Determine the type of release/source of release**

**Commingled LPST and TRRP Plumes**

- Default to TRRP regulation

**Send reports to the correct program**

- VCP-CA Programs and LPST Program screen reports
  - Faster closure when sent to the right program

**The VCP actively manages LPST sites**



# Abbreviations and Definitions

AST – Aboveground storage tank (AST) stores petroleum product

UST – Underground storage tank (UST) stores petroleum substance or hazardous substance

RDR – Release determination report (Required form for PST Chapter 334 releases)

APAR – Affected property assessment report (TRRP required Report)

RACR – Response action completion report (TRRP required report)

TPH – Total Petroleum Hydrocarbons

# Program and Rule Links

## Petroleum Storage Tank/Dry Cleaner Remediation Program Section

[Leaking Petroleum Storage Tank Cleanups - Texas Commission on Environmental Quality - www.tceq.texas.gov](http://www.tceq.texas.gov)

## Voluntary Cleanup Program/Corrective Action Section

[Voluntary Cleanup Program - Texas Commission on Environmental Quality - www.tceq.texas.gov](http://www.tceq.texas.gov)

## Texas Risk Reduction Program (TRRP) Rules

[30 TAC Chapter 350](#)

## Petroleum Storage Tank (PST) Rules

[30 TAC Chapter 334 \(PDFs\)](#)





**Tanks for Attending!**



# Questions?

## VCP

[vcp@tceq.texas.gov](mailto:vcp@tceq.texas.gov)

## IHWCA

[corract@tceq.texas.gov](mailto:corract@tceq.texas.gov)

## PST

[pstrpr@tceq.texas.gov](mailto:pstrpr@tceq.texas.gov)